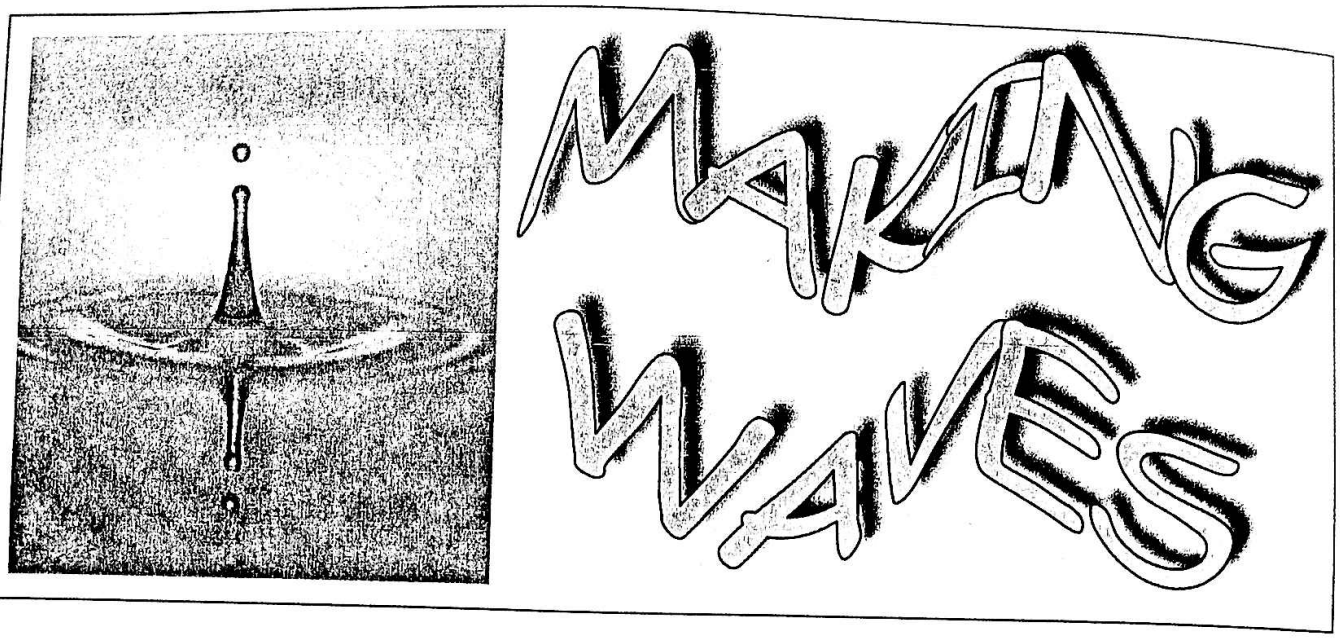

Name: _____ Date: _____ Period: _____

Think about a beautiful autumn day. You are sitting by a lake in the park. The sun is glaring brightly onto the green blades of grass. You hear music coming from a man playing a guitar. A fish jumps out of the water and dives back making a splash. You see a circle of waves that move away from the fish's entry point. The circular waves pass by a floating leaf that fell from a tree nearby. How does the leaf move in response to the waves? What might you have observed if the fish was twice the size? Perform the following activity to test your answer.

1. Retrieve a white tub, fill it with approximately 4-5centimeters of water, and place it in the center of your lab table.
2. Fill a pipette with water.
3. Release a single drop of water onto the water's surface and observe what happens. Allow every group member to repeat and observe.
4. BE CAREFUL NOT TO BUMP THE LAB TABLE!

What direction did the circular waves travel? (Outward or inward) OUTWARD

5. Float a small cork on the surface of the water towards the middle of the tub.
6. After the water becomes still again, release several drops of water NEAR, but NOT ON the cork every 3 seconds from a height of about 10 centimeters until the cork hits the side of the tub.

What effect did this process have on the cork?

IT CAUSES THE CORK TO MOVE AWAY FROM THE DROPPING WATER

7. Repeat procedural step 6, but release the drops at a height of 20cm.

PLEASE GO TO THE BACK AND CONTINUE.

What effect did the increased height of the release point have on the water and the cork?

THE CORK MOVES FASTER WHEN THE WATER IS RELEASED FROM THE HIGHER POSITION. THE POTENTIAL ENERGY AT 20 CM IS TWICE THAT OF THE WATER AT 10 CM. THIS MEANS WHEN THE PROP HITS THE WATER THE KINETIC ENERGY IS TWICE AS BIG

What makes the cork move?

THE WATER WAVES

Name at least 2 instances of potential energy in this lab?

1. WATER HELD AT 10CM/20 CM
2. CORK RELATIVE TO THE GROUND
3. TUB RELATIVE TO THE GROUND
4. WATER DROPLET IN ANY POSITION ABOVE THE SURFACE
5. (INTRO) FISH JUMPING OUT OF THE WATER

Name at least 2 instances of kinetic energy in this lab?

1. WATER DROPLET MOVING
2. CORK MOVING
3. HAND SQUEEZING BULB OF PIPETTE
4. FISH AT ANY HEIGHT OUT OF THE WATER (INTRO)

What is the difference in kinetic energy when the water was released at 10cm compare to when it was released at 20cm, how can you tell this (2 visual examples)

THE KINETIC ENERGY IS TWICE AS LARGE AT 20CM-
EVIDENCE: CORK MOVES FASTER
WAVES MOVE FASTER
WAVES ARE LARGER

What was the point of this lab? NOT to just have you play! You tell me. In your own words, WHY did we do this lab today?

TO SEE THE TRANSFER / TRANSFORMATION OF ENERGY AND TO INTRODUCE WAVES A LITTLE BIT MORE. AS THE SPEED OF THE WAVE INCREASES, THE TOTAL ENERGY OF THE WAVE ALSO INCREASES

Mark your understanding (0 = no clue, 5 = somewhat understand, 10 = Got it, move on)

1 2 3 4 5 6 7 8 9 10